

CLAIMS

- 1 1. A connector for a circuit conducting high frequency signals comprising:
 - 2 a) a housing including an input and an output terminal coupled to a data pathway
 - 3 conducting signals in excess of 1 gigahertz; and
 - 4 b) a passive circuit coupled between said input and output terminals that exhibits
 - 5 a complementary impedance characteristic to that of said data pathway and comprised of
 - 6 at least one resistor and at least one capacitor and wherein said resistor is defined by a
 - 7 resistive layer that comprises a plate of said capacitor, whereby an extended range of
 - 8 intelligible data signals is obtained.
- 1 2. A connector as set forth in claim 1 wherein said housing includes a plurality of
- 2 signal conducting pathways and a plurality of input and output ports respectively coupled
- 3 thereto, wherein each of said data pathways includes one of said passive circuits coupled
- 4 between the respective input and output ports.
- 1 3. A connector as set forth in claim 2 wherein said input and output ports are
- 2 connected to individual conductors of a multi-conductor cable.
- 1 4. A device as set forth in claim 1 wherein said resistive layer is formed of a
- 2 material selected from a class of materials including tantalum oxide, silicon dioxide,
- 3 silicon nitride, or nickel chrome.
- 1 5. A device as set forth in claim 1 wherein said passive circuit includes a
- 2 cylindrical conductive substrate containing said resistor and said capacitor and wherein
- 3 said resistor and capacitor are constructed as thin film devices.
- 1 6. A device as set forth in claim 1 wherein said resistor and capacitor are coupled
- 2 to one another in shunt.

1 7. A passive thin film circuit device for conditioning a data conducting pathway
2 comprising a signal layer including a thin film resistor and a thin film capacitor deposited
3 on a first surface of a dielectric substrate and coupled in shunt to one another and
4 terminating at input and output terminals, wherein said resistor comprises a plate of said
5 capacitor, and wherein said device is able to pass intelligible signals in excess of one
6 gigahertz.

1 8. A device as set forth in claim 7 wherein said circuit device includes a plurality
2 of capacitors and resistors and wherein said resistors and capacitors are coupled together
3 as a filter.

1 9. A device as set forth in claim 7 wherein said circuit device comprises a
2 cylindrical conductive substrate and whereon said resistor and capacitor are constructed
3 as thin film devices.

1 10. A device as set forth in claim 9 wherein a resistive layer is deposited onto
2 said substrate, such that said resistive layer defines a resistor and a first plate of said
3 capacitor, a dielectric layer is deposited over said resistive layer and a conductive layer is
4 deposited over said dielectric layer that defines a second plate of said capacitor.

1 11. A connector for high frequency signals comprising:

2 a) a housing including a plurality of input and output terminals coupled to a
3 substrate containing a plurality of data pathways respectively conducting data signals in
4 excess of 1 gigahertz between said input and output terminals; and

5 b) a plurality of passive thin film circuits mounted to said substrate and each
6 serially coupled to at an input and an output port to one of said data pathways, wherein
7 each thin film circuit exhibits a predetermined impedance characteristic complementary

8 to that of the data pathways to data signals in excess of a predetermined frequency, and
9 wherein each thin film circuit comprises a plurality of resistors and capacitors coupled
10 between said input and said output port, wherein each thin film circuit comprises a
11 substrate, first and second layers defining first and second plates of said capacitors, a
12 dielectric layer intermediate said first and second layers, and wherein one of said first and
13 second layers defines said resistors.

1 12. A device as set forth in claim 11 wherein the one of said first and second
2 layers that defines said resistors is formed of a material selected from a class of materials
3 including tantalum oxide, silicon dioxide, silicon nitride, or nickel chrome.

1 13. A thin film device for coupling to and conditioning conductive pathways to
2 pass intelligible data signals in excess of 1 gigahertz comprising:

3 a) a passive thin film module including a plurality of circuits comprised
4 exclusively of resistors and capacitors coupled between a plurality of input and an output
5 ports, wherein said module includes an electrically insulative substrate, a first layer
6 defining a first plate of each of said capacitors, a dielectric layer overlying each first
7 plate, and a resistive layer overlying said dielectric layer and coextensive with each first
8 plate and defining a resistor of said circuits and a second plate of said capacitors,
9 whereby each circuit exhibits a predetermined impedance characteristic complementary
10 to data signals in excess of one gigahertz; and

11 b) a plurality of terminations coupled to said input and output ports.

1 14. A device as set forth in claim 13 wherein said resistive layer is formed of a
2 material selected from a class of materials including tantalum oxide, silicon dioxide,
3 silicon nitride, or nickel chrome.

1 15. A device as set forth in claim 13 wherein said terminations comprise a ball
2 grid array.

1 16. A device as set forth in claim 13 wherein portions of said resistive layer that
2 do not overlie said first capacitor plate defines other resistors of said circuits.

1 17. A connector for high frequency signals comprising:

2 a) a connector body having a housing adapted for interconnection with input and
3 output conductors; and

4 b) a core piece supported within said housing and having a substrate and a
5 plurality of layers deposited over said substrate, wherein said layers include first and
6 second conductive layers that define first and second plates of a capacitor, a dielectric
7 layer sandwiched between said first and second conductive layers, and wherein one of
8 said first and second conductive layers also defines a resistor, and wherein said core piece
9 exhibits a predetermined impedance characteristic complementary to data signals
10 conveyed by said input and output conductors.

1 18. A device as set forth in claim 17 wherein said substrate comprises a
2 cylindrical conductive member concentrically mounted to adjacent tubular conductors
3 connected to said input and output conductors.

1 19. A device as set forth in claim 17 wherein said core piece includes an annular
2 band of conductive material that electrically couples to one of said input and output
3 conductors.

1 20. A device as set forth in claim 17 wherein said substrate comprises a tubular
2 member concentrically mounted to adjacent conductors connected to said input and
3 output conductors.

1 21. A connector for high frequency signals comprising:
2 a) a coaxial connector body having a housing adapted for interconnection with
3 input and output conductors; and
4 b) an electrically conductive core piece supported within said housing and having
5 a plurality of layers including a first conductive layer defining a resistor and a first plate
6 of a capacitor, a dielectric layer overlying said first conductive layer, and a second
7 conductive layer overlying said dielectric layer and defining a second plate of said
8 capacitor, and wherein said core piece exhibits a predetermined impedance characteristic
9 complementary to data signals conveyed by said input and output conductors.

1 22. A device as set forth in claim 21 wherein said core piece comprises a
2 cylindrical conductive substrate containing said first and second conductive layers and
3 said dielectric layer and concentrically mounted to adjacent conductors connected to said
4 input and output conductors.

1 23. A device as set forth in claim 22 wherein said core piece comprises a tubular
2 substrate.